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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/974,935	10/10/2001	Jeffrey A. Levin	010364	1124
23696	7590	12/28/2005	EXAMINER	
QUALCOMM, INC			KIM, KEVIN	
5775 MOREHOUSE DR.			ART UNIT	
SAN DIEGO, CA 92121			PAPER NUMBER	
			2638	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/974,935

Applicant(s)

LEVIN ET AL.

Examiner

Kevin Y. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-29,31-46,48-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-14,17,18,31,32,33,37,41 and 45 is/are allowed.
- 6) ☒ Claim(s) 1,19-21,23-29,34,38,42,46,48 and 49 is/are rejected.
- 7) ☒ Claim(s) 2-10,15,16,22,35,36,39,40,43,44 and 50 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, filed December 2, 2005, with respect to the rejection(s) of claim(s) 1,19,20,21,23-29,34,38,42,46,48 and 49 under 35 USC 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a newly found prior art reference.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Objections***

3. Claim 50 is objected to because of the following informalities: Claim 50 is written to depend on claim 46. But in light of context, it appears that it should be dependent on claim 49 instead. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. Claims 1,19,20,21,23-29,34,38,42,46,48 and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Yellin (US 6,628,701 submitted by applicant).

#### **Claims 1, 21,34,38,42,46,48,49.**

Yellin discloses a method and apparatus of canceling pilot interference at a receiver unit (see Fig.4) in a wireless communication system, comprising;

receiving a signal (r(n)) comprised of a plurality of signal instances, wherein each signal instance a pilot and data, see col. 4, lines 33-38,

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estimating pilot interference due to each of the plurality of signal instances, see col. 7, lines 45-46,

accumulating the estimated pilot interference due to the plurality of signal instances in a buffer (22) to provide a total pilot interference,

subtracting the total pilot interference from the received signal to derive a pilot interference cancelled signal ( $X'(n)$ ) and

processing the pilot interference cancelled signal to derive data for each signal instance in the received signal, see Decoder 18.

**Claims 19 and 20.**

See col. 5, lines 31-39 in particular for estimating pilot interference “based on segments of data samples” or “data samples for one symbol period” of the received signal before accumulated with other interference estimates.

**Claim 23.**

Yellin shows the deriving the total pilot interference before processing of the pilot interference cancelled signal, thus, performing them “in a pipelined manner.”

**Claims 24-29.**

Yellin describes the receiver in a CDMA system. See col.4, line18.

*Allowable Subject Matter*

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5. Claims 2-10,15,16,22,35,36,39,40,43,44 and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. Claims 11-14,17,18, 31-33, 37,41 and 45 allowed.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Pat. No. 6,917,642 teaches interference cancellation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*1/24/05*

KEVIN KIM  
PATENT EXAMINER